WHAT IS CLAIMED IS:

1. An illumination device having a light pipe of a substantially parallel flat-form sheet, of which one surface is an outgoing light surface, and a light source unit is placed along one side edge and opposite both side edges, the device comprising:

a light axis of lights unparallel to said outgoing light surface of said light pipe after the lights having entered said light pipe from said light source;

a reflection body unit consisting of plural unit reflection bodies divided into m in a vertical direction of said light source unit at an opposite side surface of said outgoing light surface of said light pipe; and

a reflection surface existing inside said unit reflection bodies, and reflecting lights which have entered within the reflection body from inside of the light pipe in contacting said light pipe in the outgoing light surface direction of the light pipe,

wherein said reflection body unit can contact and separate from the opposite side surface of said outgoing light surface of said light pipe for every said unit reflection bodies, and

wherein each unit reflection body composing said unit reflection body is composed of material substantially equal in a refractive index to said light pipe.

2. An illumination device according to claim 1, wherein a light axis of lights entering said light pipe from said light source unit is unparallel to said outgoing light surface of said light pipe.

3. An illumination device according to claim 2, wherein said light source unit is composed of a linear light source and an optical comp nent which makes a light axis enter said light pipe from said light source unit provided

between the linear light source unit and said light pipe.

4. An illumination device according to claim 1, wherein an end opposite to said light source unit of the light pipe slants for said outgoing light surface.

5. A illumination device according to claims 1, 2, and 4, wherein a light axis of lights entering said light pipe from said light source unit is unparall l to said outgoing light surface of said light pipe and an end of said light source unit side slants for said outgoing light surface.

6. An illumination device according to any of claims 1 to 5, wherein an angle Φ which a light axis of lights after having entered said light pipe makes with said outgoing light surface of said light pipe in a vertical plane for said light source unit is:

$$\Phi \geq \mathrm{Arc\ tan}\ (dkm/L),$$

where d is a thickness in a vertical direction for the outgoing light surface of the light pipe; m is a divide number of said reflection body; L is a length of an outgoing light surface; and k is a ratio (duty number) at which said reflection body contacts the light pipe.

7. An illumination device according to claims 2 and 3, wherein an angle Φ' which a light axis entering said light pipe makes with said outgoing light surface of said light pipe in a vertical plane for said light source unit is:

$$\mathrm{Sin}\,\Phi' - n\,\mathrm{Sin}\,\Phi,$$

where $\Phi \geq \mathrm{Arc\ tan}(dkm/L)$; n is a refractive index of the light pipe; d is a thickness in a vertical direction for the outgoing light surface of the light pipe; m is a divide number of said reflection body; L is a length of an outgoing light surface; and k is a ratio (duty number) at which said reflection body contacts the light pipe.

8. An illumination device according to claim 4, wherein an angle θ which

an end f said light sourc unit side makes with a vertical plane of said outgoing light surface of said light pipe has a relationship as:

$$\mathrm{Sin}\ \theta = \mathrm{n}\ \mathrm{Sin}\ \theta',$$

where;

$$\theta - \theta' = \Phi,$$

$$\Phi \geq \mathrm{Arc\ tan}\ (\mathrm{dkm/L}),$$

and n is a refractive index of the light pipe; d is a thickness in a vertical direction for the outgoing light surface of the light pipe; m is a divide number of said reflection body; L is a length of an outgoing light surface; and k is a ratio (duty number) at which said reflection body contacts the light pipe.

9. An illumination device according to claims 4, 5, and 6, wherein an end of said light source unit side of said light pipe slants for said outgoing light surface; wherein, at said light source unit side of a side surface for which said end of said light pipe makes an acute angle, an optical element absorbing or reflecting lights is disposed; and wherein a length I from an obtuse side end of said end is:

$$\mathrm{I} = \mathrm{d}\ \tan(\mathrm{Arc\ Sin}\ 1/\mathrm{n}),$$

where d is a thickness in a vertical direction for an outgoing light surface of a light pipe and n is a refractive index of the light pipe.

10. An illumination device according to any of claims 1 to 5, wherein an angle Φ which a light axis of lights after having entered said light pip makes with said outgoing light surface of said light pipe in a vertical plane for said light source unit is:

$$\Phi \geq \mathrm{Arc\ tan}\ (\mathrm{dkm/2L}),$$

where d is a thickness in a vertical direction for the utgoing light surface of the light pipe; m is a divide number f said reflection b dy; L is a length of an

outgoing light surface; and k is a ratio (duty number) at which said reflection body contacts the light pipe.

11. An illumination device according to claims 2 and 3, wherein an angle Φ' which a light axis entering said light pipe makes with said outgoing light surface of said light pipe in a vertical plane for said light source unit is:

$$\mathrm{Sin}\,\Phi' = n\ \mathrm{Sin}\,\Phi,$$

where;

$$\Phi \geq \mathrm{Arc\ tan}\ (dkm/2L),$$

and n is a refractive index of the light pipe; d is a thickness in a vertical direction for the outgoing light surface of the light pipe; m is a divide number of said reflection body; L is a length of an outgoing light surface; and k is a ratio (duty number) at which said reflection body contacts the light pipe.

12. An illumination device according to claim 4, wherein an angle θ which an end of said light source unit side makes with a vertical plane of said outgoing light surface of said light pipe is:

$$\mathrm{Sin}\ \theta = n\ \mathrm{Sin}\ \theta',$$

where;

$$\theta - \theta' - \Phi,$$

$$\Phi \geq \mathrm{Arc\ tan}\ (dkm/2L),$$

and n is a refractive index of the light pipe; d is a thickness in a vertical direction for the outgoing light surface of the light pipe; m is a divide number of said reflection body; L is a length of an outgoing light surface; and k is a ratio (duty number) at which said reflection body contacts the light pipe.

13. An illumination device according to any of claims 2, 4, and 5, wherein said light source unit makes an axis direction of outgoing lights changeable for said light source unit in a vertical plane.

14. An illumination device according to claim 3, wherein said optical element disposed between said light source unit and sad light pipe makes an axis direction to said light pipe changeable for said light source unit in a vertical plane.

15. An illumination device according to claims 13 and 14, wherein a change of a light axis of lights entering said light pipe by each one of said light source unit and said optical element is synchronized with a cycle of contact and separation.

16. An illumination device according to claims 13, 14, and 15: wherein a change of a light axis of lights, which enters said light pipe by said light source unit and said optical element, makes an angle Φ, which the light axis after having entered makes with an outgoing light surface of said light pipe for said light source unit in a vertical plane; and wherein the angle Φ is in a range of:

$$\mathrm{Arc\,tan}(dkm/L) > \Phi > \mathrm{Arc\,tan}(dkm/(2km-1)),$$

where d is a thickness in a vertical direction for an outgoing light surface of the light pipe; m is a divide number of the reflection body; L is a length of an outgoing light surface; and k is a ratio (duty number) at which the reflection body contacts the light pipe.

17. An illumination device according to any of claims 1 to 12, wherein reflection surfaces inside a unit reflection body composing said reflection body unit are parallel to said light source unit and a mountain-shape, and wherein a scattering profile of the mountain- shape is uniform in all unit reflection bodies.

18. An illumination device according to any of claims 1 to 5 and 13 to 16, wherein reflection surfaces inside a unit reflection body composing said reflection body unit are parallel to said light source unit and a mountain-shap ,

and wherein a scattering pr file f the mountain- shape is different between near and far ends of said light source unit and a middle of the light pipe.

19. An illumination device according to claim 17, wherein an angle θ which is made with reflection surfaces inside a unit reflection body composing said reflection body unit and an outgoing light surface of said light pipe is:

$\theta = (90 - \Phi)/2$,

where:

$\Phi \geq \mathrm{Arc\ tan}\,(dkm/L)$,

and d is a thickness in a vertical direction for the outgoing light surface of the light pipe; m is a divide number of said reflection body; L is a length of an outgoing light surface; and k is a ratio (duty number) at which said reflection body contacts the light pipe.

20. An illumination device according to claim 18, wherein an angle θ which is made with reflection surfaces inside a unit reflection body composing said reflection body unit and an outgoing light surface of said light pipe is at a near end portion of said light source unit:

$\theta = (90 - \Phi)/2$ and $\Phi = \mathrm{Arc\ tan}(dm/L)$,

at a far end portion from the light source unit:

$\theta = (90 - \Phi)/2$ and $\Phi = \mathrm{Arc\ tan}(dm/L(2m-1))$, and

wherein the angle θ has a gradual change between said near end portion and said far end portion; and wherein when said light source units exist at both side edges, the angle θ of respective opposite surfaces of said mountain-shape within a reflection body inside unit reflection body composing said reflection body unit is composed as above.

21. An illumination device having a light pipe of substantially parallel flat sheet-form, of which ne surface is an outgoing light surface, and a light source

unit(s) placed along on sid edge and opposite two side dges of said light pipe, the device comprising:

a reflection body unit consisting of plural unit reflection bodies divided into m in a vertical direction for said light source unit at an opposite side surface of said outgoing light surface of said light pipe;

wherein said unit reflection body unit can contact and separate from th opposite side surface for said every unit reflection bodies;

wherein a refractive index of each unit reflection body is equal to the refractive index of said pipe and each unit reflection body is composed of substantially equal material in the refractive index to said pipe;

wherein said unit reflection bodies divided into m, of which j pieces ($j \leq m$) concurrently contact said light pipe, inside thereof have reflection surfaces composed so as to reflect lights, which have entered within each unit reflection body from inside of the light pipe in contacting said light pipe, in an outgoing light direction of the light pipe; and

wherein most of lights having entered said light pipe from said light source unit totally reflect once at an inner surface of said light pipe until a position equivalent to said j pieces of unit reflection bodies.

22. An illumination device according to any of claims 1 to 21, wherein mountain-shaped reflection surfaces within said unit reflection bodies are composed of plural mountain-shapes.

23. An illumination device according to any of claims 1 to 21, wherein mountain-shaped reflection surfaces within said unit reflection bodies are composed of one mountain-shape.

24. An illumination device according to any of claims 1 to 23, wherein said light pipe side surface of said unit reflection bodies consists of material which

can be easily def rm d.

25. An illumination device according to any of claims 1 to 24, wherein said light pipe side surface of said unit reflection bodies is a smooth mountain shape of which height of a middle portion is high

26. An illumination device according to any of claims 1 to 25, wherein a means to make said unit reflection bodies contact and separate from said light pipe is actuators which are placed at an opposite side of said light pipe of said each unit reflection body and change electric signals to variations of positions.

27. An illumination device according to any of claims 1 to 25, wherein a means to make said unit reflection bodies contact and separate from said light pipe is a rotating endless belt with protrusions which is placed at an opposite side of said light pipe of said each unit reflection body, and wherein said contact and separation are selected by a rotation of the endless belt.

28. An illumination device according to any of claims 1 to 25, wherein a means to make said unit reflection bodies contact and separate from said light pipe is two pairs of shape-memory alloys which are placed at an opposite sid of said light pipe of said each unit reflection body and return to original shapes by heat application.

29. An illumination device according to any of claims 1 to 25, wherein a means to make said unit reflection bodies contact and separate from said light pipe is a rotor which is fixed at a different angle for every said each unit reflection body and of which rotation shaft is eccentric.

30. A display device of which illumination device is said illumination device according to any of claims 1 to 29, the device comprising:

a plurality of scan lines formed at l ast one of a pair of b ards pinching a liquid crystal layer and extending in a first direction and parallel provided in

a second direction intersecting the first direction, a plurality f signal lines extending said second direction and parallel provided in said first direction, and a display panel equipped with pixels at said intersection portions of said scan lines and said signal lines;

a scan line driving circuit selecting said scan lines in predetermined turn, and a signal line driving circuit applying image signals supplied from a display source to said signal lines selected by said scan circuit;

an illumination device stacked at one side of said one pair of boards of said liquid crystal display panel, and giving illumination lights to the display panel; and

a control circuit receiving image signals from said display source and controlling said scan line driving circuit, said signal line driving circuit, and said illumination device.

31. A display device according to claim 30, wherein a scan direction of said scan lines by said scan line driving circuit and an m-divide direction are same, and

wherein being synchronized with a scan cycle of said scan line driving circuit, said control circuit contacts and separates from m-pieces of reflection bodies composing a reflection body unit of said illumination device.

32. A display device according to claims 30 and 31, wherein said control circuit operates by changing a mode, which synchronizes a cycle of contact with and separation from said light pipe of unit reflection bodies composing a reflection body unit of said illumination device by image signals from said display source with said scan cycle, to and from a high frequency mode.